F ;er & Associates
Star Rt. Box 199 Cook, MN 55723

May 2, 1984

Nancy Misra
Pollution Control Specialist
MPCA
1935 W. County Rd. B-2
Roseville, MN 55113

Dear Nancy:

The following letter is in clarification of certain points of your most recent correspondence, (April 10, 1984).

1). Irathane does have a source for its waste oil and as such will no longer use oil for dust control.

2). A copy of Manifest #000017 was sent to MPCA on April29, 1984 at the request of Dale Wikre.

3). The following section deals with disclosure MND-7 and the components that comprise it.

a). Each of waste streams MND-4,5,8,9 is inclusive of several distinct products used or manufactured by Irathane. Rather than individually listing <u>each</u> product as a waste when scrapped, (as was done on Irathane's original disclosure and thereby requiring confidentiality), Irathane has instead listed several distinct products within "like" groups in the amended disclosure. "Like" groups are those groups that are similar because of their reactive groups.

Waste streams MND-4 and 5 are both comprised of polyols, (either solid or liquid), and are so grouped because of their reactive "OH" groups. Waste stream MND-8 is composed of groups with reactive isocyanate groups while MND-9 owes its reactivity to amine groups.

b). When distinct products from the same group are scrapped, the products are not co-mingled prior to neutralization. Rather, the containers are marked, and all pertinent information is recorded on a log.

Irathane has distinct volume and weight ratios at which each product is reacted. Thus scrapped or waste products are not hap-hazardly mixed, but are joined according to a fixed ratio for each material. Samples of off-spec materials are reacted by the lab prior to neutralization to determine the correct volume ratios.

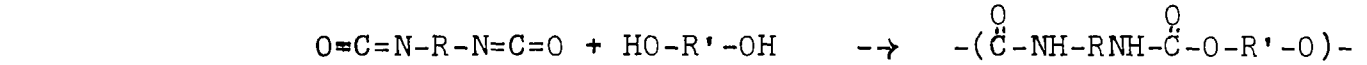
3) Disclosure MND-7 cont'd

c). In the polyurethane industry, reactions are designed such that there is a stoichiometric excess of isocyante. This insures that the curative, (the "OH" or "amine" group), is completely exhausted or used up during the reaction. The remaining isocyanate is moisture reactive and therefore reacts with either available water or cross-links with other urea or urethane groups to complete the reaction. Stoichiometry is used in the polyurethane industry to insure that the reactants are completely exhausted.

d). Below are the two basic reactions by which polyurethanes are generated at Irathane:

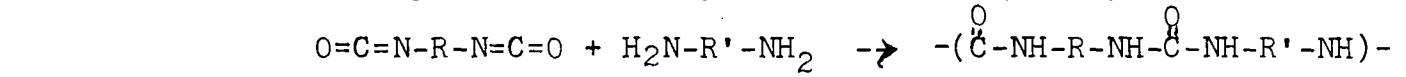
i). MND-8 + MND-4 OR 5 → MND-7

(Isocyanates) + (Polyols) → (Polyurethanes)



ii). MND-8 + MND-9 → MND-7

(Isocyanates) + (Polyamines) → (Polyurethanes)



Please contact me with any further questions or comments.

Sincerely,

Laurie Potter
Environmental Consultant

LRP/dp